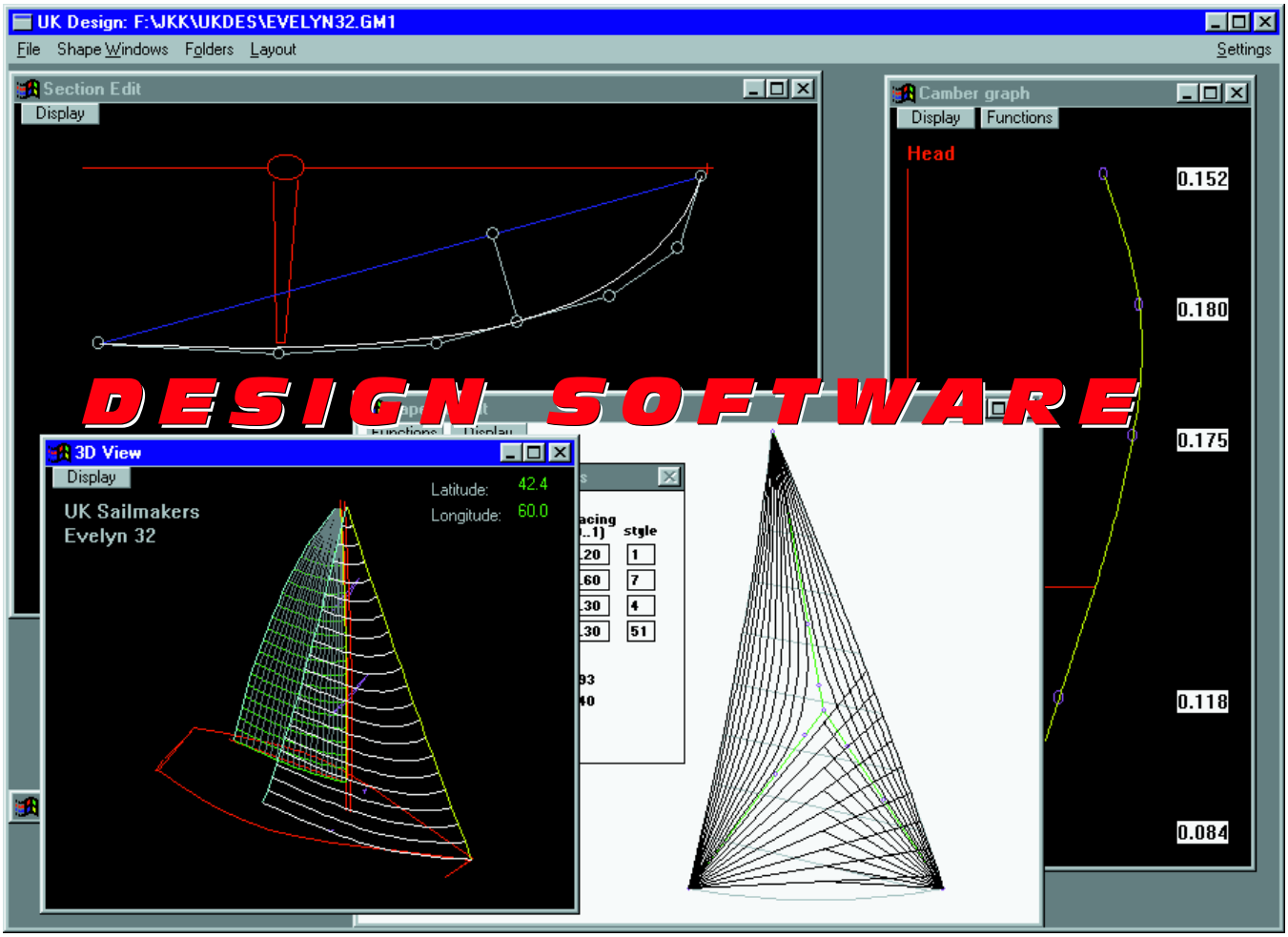
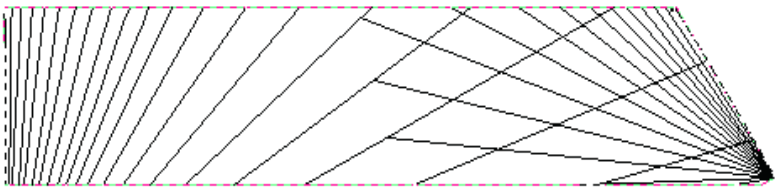


UK-Halsey Sailmakers' proprietary design software is the collateral behind our claim of being "The Sail Technology Leader." UK-Halsey's ACCUCUT℠ and ACCUMEASURE℠ programs are state of the art and are constantly being updated.

Whether we are building a mainsail, genoa, spinnaker, or asymmetrical spinnaker, it is designed with our ACCUCUT software, which defines the three-dimensional molded shape of the sail as a single, smooth mathematical surface.



A single panel from a No.3 genoa showing the Tape-Drive lines.

The individual panels are then mathematically peeled off the surface of the mold, complete with the Tape-Drive lines and other marks on them, and then are cut by computer controlled cutters

When the panels are assembled, the Tape-Drive lines are in the same location on the sail membrane that they were in on the mold. The finished sail membrane will exactly fit a physical mold of the same shape as the mathematical one, and is essentially the same as if it had actually been constructed on a physical mold.

The shape of a mold is determined by defining the shape of cross sections at several heights in the sail, somewhat like frames in a boat. UK-Halsey Sailmakers ACCUCUT design program uses bezier spline curves for these sections because of their flexibility and controllability. The shape of each section is defined by a number of parameters such as maximum camber (depth), twist (the angle from the center-line of the boat), entry angle, and exit angle. With ACCUCUT, UK-Halsey's designers can look at graphs showing the vertical distribution of each of these parameters.

One of the primary benefits of 3-D design is that the sail designer deals directly with sail

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shape. If the designer wants to make the sail two inches deeper at the middle draft stripe, he just makes the mold two inches deeper there rather than trying to estimate how much additional broadseam and luff curve will give him the change he wants.

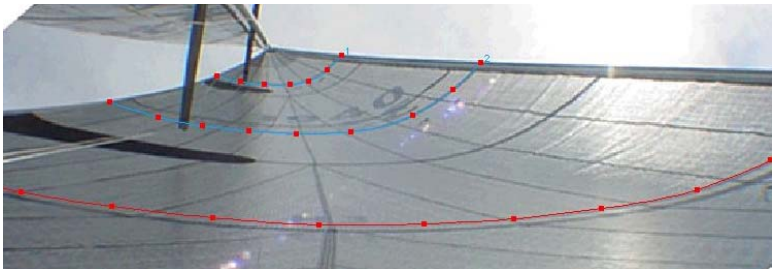
Mathematical molds allow very exact and detailed control over shape. They are fast and easy to modify. We can put the mold on the boat in the computer to see how it fits around the rig and each spreader. ACCUCUT allows designs to overlay two molds and slice through them wherever he wants to compare the shapes.

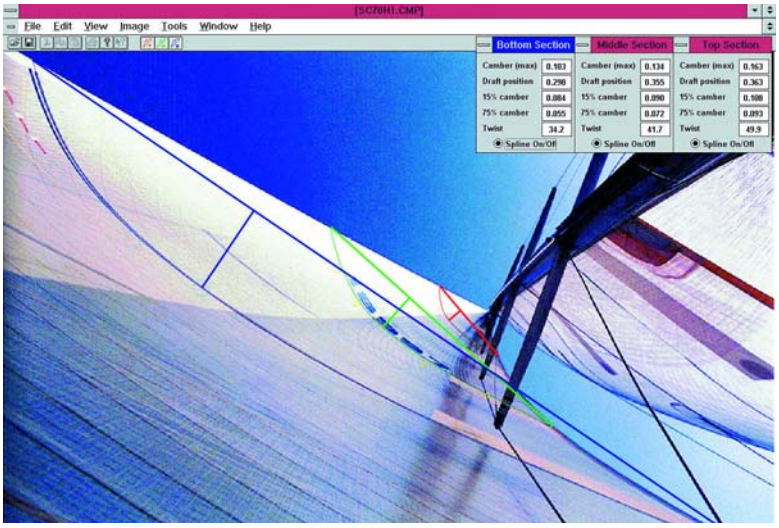
Another advantage of mathematical molds is that they can be scaled and stretched mathematically to preserve certain shape characteristics while changing others in a uniform way. UK-Halsey Sailmakers' ACCUCUT design program has algorithms built into it to automatically make adjustments to master molds to fit them to individual boat geometries.

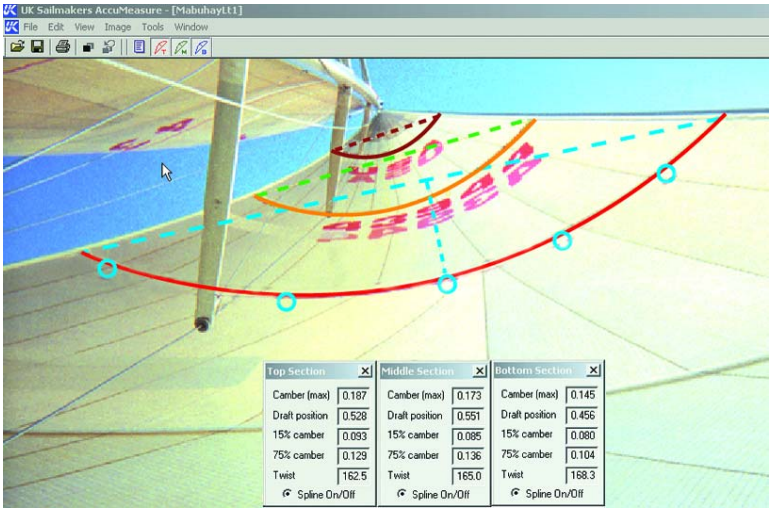
There is still a considerable amount of art and skill involved in sail design. A sail needs to perform well though a range of conditions, so the molds must be developed with characteristics that allow the sail to be adjusted. The designer may pick a different design point based on how much mast bend the boat carries and how well it can be controlled, how straight a headstay it can maintain, how wide a range the sail is targeted for and which end of the range to favor, how much helm the boat develops, and potentially many other issues. That's why our customers benefit from working with a world-wide group of sailmakers who share their designs and experience.

UK-Halsey's ACCUMEASURE digital sail measuring program works hand in glove with ACCUCUT. Using a digital picture of a sail, ACCUMEASURE can discern the sail's shape. ACCUMEASURE helps UK-Halsey's designers ensure that a sail's flying shape is the same as its designed shape. Comparing measured shape to designed shape allows us to develop fast designs for any boat quickly. Because the spline functions of ACCUMEASURE are identical to the spline functions of ACCUCUT, the analysis is cohesively interactive.

Second, we use the ACCUMEASURE to document any shape changes over the years. Tracking our sail shapes over time helps us to understand how sails change shape. The documentation process helps our designers build better sails for the future.







BOTH ABOVE: Genoas with good aerodynamic shape. Middle picture shows AccuMeasure measurements a the three draft stripes. LEFT: A blown-out No. 1. Draft has moved aft in the sail.

Third, we can breathe life back into a slow sail by recutting it. The program's measurements will tell our staff how much reshaping needs to be done. In many cases we have made minor shape changes to sails that have resulted in dramatic improvements in performance. ACCUMEASURE can size up any sail— whether it was made by UK Sailmakers or anyone else. Other sailmakers may have some digitizing capacity, but no other sailmaker has the combined technology of ACCUCUT and ACCUMEASURE Both are superior to what is on the market today. Both give UK-Halsey Sailmakers the leading edge sail design technology.